

Chapter 2: Alternatives

Introduction

This chapter describes how alternatives were developed, the alternatives considered but not analyzed in detail, and the alternatives studied in detail. It presents mitigation requirements that would be in place under any action alternative, and compares the environmental impacts anticipated under each alternative.

Alternative Development

Based on the preliminary issues, the Interdisciplinary Team developed five alternatives to the proposed action submitted by CPG. Included in the range of alternatives is the “No Action” alternative as required by NEPA (40 CFR 1502.14(d)). These alternatives were sent to interested parties for further review and comment. Four public meetings to review the proposed alternatives were held at Girdwood, Seward, Moose Pass, and Hope. Fifty written responses were received.

Most respondents commented on the alternative they preferred. Several respondents requested that the 2000-2002 level of use (800 client days and 111,200 acres) be added as an alternative studied in detail. Alternative 9 reflects this request.

The alternatives analyzed in detail distinguish use areas as either Core Units or Exploratory Units. Core Units are defined as areas historically authorized for commercially guided helicopter skiing operations. Exploratory Units are defined as areas that have not been historically authorized for guided heli-skiing or, in the case of the Moose Creek Unit, were authorized for temporary use in 1997 and 1998. Throughout the life of the permit core and exploratory units would remain as distinct units and would not be combined.

Alternatives Not Analyzed in Detail

Six alternatives were developed but were eliminated from detailed study.

CPG's Original Proposal

This alternative was submitted by CPG on June 24, 2002 with their application for a five-year special use permit for guided helicopter skiing. This alternative was not carried forward because the proponent made modifications to the proposal to reduce user conflicts and impacts to communities. These modifications include, moving the boundary of the East Moose Creek unit, placing a timing restriction on the West Bench Peak unit, and changing the staging areas from Trail Lake to Mile 33.2 and Mile 14 to Mile 12.4. These modifications have been incorporated into Alternative 2, the modified proposed action.

Alternative A

This alternative was developed to address the number of takeoffs/landings in Girdwood. This alternative included fewer takeoffs and landings than the 30 cycles in the proposed action. Elements of this alternative have been incorporated into Alternative 9. For example, Alternative 9 would allow 24 takeoffs/landings from the Girdwood Airstrip.

Alternative B

This alternative was developed to mitigate mountain goat impacts using a 1,000-meter buffer. This alternative differs from the proposed action, which outlines a 500-meter buffer. This alternative was eliminated from detailed study because it excludes flights to and landings in most of the proposed use area. Furthermore, the amount of “unbuffered” non-goat habitat would not have been adequate to support a viable heli-skiing operation.

Alternative 6 - Reduced Noise and Social Impacts

This alternative was developed by the Interdisciplinary Team to emphasize a reduction of the noise and social impacts in the community of Moose Pass. No use would be permitted in West Bench Peak, West Seattle Creek, East Seattle Creek, West Moose Creek, East Moose Creek, West Ptarmigan, and East Ptarmigan. In addition, there would be no staging area at Mile 33.2.

Through public comment, CPG responded that since only the Snow River and Mt. Ascension units would be available for their use on the southern end of the project area and so little skiing is planned in these units, it would not be viable to operate in these exploratory units. Therefore, Alternative 6 was eliminated from detailed study, and Alternative 5 was modified to include the significant features in Alternative 6 to reduce user conflicts and community impacts.

Alternative 7

This alternative was developed by the Interdisciplinary Team to minimize the cumulative effects on wildlife in the heavily used motorized use areas. In this alternative, helicopter-skiing would not be authorized in East and West Moose Creek and East and West Ptarmigan units. This alternative was eliminated from detailed study because there are no additional cumulative effects on wildlife that are not already addressed by the mitigation measures developed for all alternatives.

Alternative 8

This alternative was developed by the Interdisciplinary Team to address noise concerns in the community of Moose Pass. This alternative addressed this issue by excluding the exploratory units. It was eliminated from detailed study because Alternatives 4 and 9 incorporate this design, and do not include the exploratory areas.

Alternatives Studied in Detail

This analysis addresses six alternatives in detail. These alternatives can be summarized as follows:

- **Alternative 1 - No Action:** In this case, no action is defined as not issuing the requested special use permit, and thus not authorizing CPG helicopter skiing operations on the Chugach National Forest.
- **Alternative 2 - Proposed Action:** This modified proposed action is Forest Service approval of CPG’s application for a five-year special use permit to conduct heli-

skiing operations on the Chugach National Forest.

- **Alternative 3 - Reduced Recreation Conflicts and Impact on Communities:** This alternative was developed by the Interdisciplinary Team to emphasize a reduction of the recreational user conflict and noise impact to communities concerns discussed in Chapter 1.
- **Alternative 4 - Current Level:** This alternative is the 2003 permit level of helicopter skiing.
- **Alternative 5 - Minimized Recreation Conflicts:** This alternative was developed by the Interdisciplinary Team to minimize the recreational conflicts.
- **Alternative 9 – 2000-2002 Level of Use:** This alternative was developed by the Interdisciplinary Team to reflect the 2000-2002 level of use and acreage under permit. Some areas permitted in 2002 and prior years are no longer available for helicopter skiing under the Revised Forest Plan. To compensate for these reductions, adjacent areas that are available for helicopter skiing and were analyzed and permitted in 2003 were added to this alternative.

Table 2-1, at the end of this section, displays a summary of the alternatives.

Alternative 1 - No Action

Under the No Action Alternative, the Forest Service would not issue CPG a special use permit for guided heli-skiing. For the purposes of this analysis, it is assumed that no other permits would be issued, and that the recreational opportunity for guided heli-skiing would no longer be available on the Kenai Peninsula, CNF. It does not preclude unguided publics from chartering a helicopter and skiing in the area. This alternative provides a clear baseline for comparing the environmental impacts of the proposed action and other alternatives in this EIS. See Map 2-1.

Map 2-1

Back of Map 2-1

Alternative 2 - Proposed Action (338,200 acres)

Core Units — 141,000 acres

Core Restricted Units*— 18,100 acres

Exploratory Units — 179,100 acres

Net Acres Available (after mitigation)*** - 272,801 (131,247 Core, 141,554 Exp.)

Client Days – 2,400 (1,800 Core and 600 Exploratory)

Alternative Design. This alternative is the applicant's modified proposal for a five-year helicopter skiing permit.

Alternative Description. This alternative would implement the client days proposed by the applicant - 1,800 within core units and 600 within exploratory units. A maximum of 30 takeoffs/landings per day would be allowed at each staging area. The season of operation would be from December 15 through April 20. This alternative would authorize CPG use of the units described below (see map 2-2.)

Core Units (1,800 client days)

- Glacier-Winner
- West Twentymile
- North Twentymile
- East Twentymile
- Placer-Skookum
- Grandview
- West Bench Peak (Monday-Thursday)
- North Bench Peak
- East Bench Peak

Exploratory Units (600 client days)

- West Seattle Creek
- Mid Seattle Creek
- East Seattle Creek
- West Moose Creek
- East Moose Creek
- West Ptarmigan
- East Ptarmigan
- Snow River
- Mount Ascension

Staging Areas

- Girdwood Airstrip
- Kern Creek (avalanche gun mount site)
- Ingram Creek
- Big Game Alaska
- Mile 62 Gravel Pit (National Forest site)
- Mile 33.2 Gravel Pit (National Forest site)
- Mile 12.4

* **Core Restricted Units** no use on Fridays, Saturdays, and Sundays.

*****Net Acres Available (after mitigation)** No-Fly Zones (see Chap. 2, Mitigation Measures, Wildlife Impact Issues, #3.)

front of Map 2-2

back of map 2-2

Alternative 3 - Reduced Recreation Conflicts/Community Impacts (306,300 acres)

Core Units — 135,400

Core Restricted Units*— 23,700

Exploratory Units — 135,300

Exploratory Restricted Units**— 11,900

Net Acres Available (after mitigation) *** – 249,992 (Core 131,247, Exp 118,745)

Client Days – 2,200 (1,800 Core and 400 Exploratory)

Alternative Design. This alternative was developed to address user conflict and community impacts. This alternative incorporates both the use of timing features and a reduction in the overall use levels in the exploratory units.

Timing features include a weekend (Friday, Saturday and Sunday) restriction on heli-skiing in the East Seattle, West Bench Peak and North Bench Peak areas. During public scoping, these areas were specifically identified as popular and accessible by non-motorized users. The timing feature is included to separate and accommodate both user groups. This alternative also reduces the amount of client days in the exploratory units from 600 to 400. This reduction was designed to reduce the chance of motorized/non-motorized interaction within the exploratory area.

This alternative also addresses community impacts by eliminating a staging area adjacent to Moose Pass and by reducing the amount of skiing area within an audible and visual zone adjacent to the communities of Hope, Sunrise and Moose Pass. Approximately 32,000 acres have been removed from the proposal. These acres comprise the units of West Seattle Creek, West Moose Creek and West Ptarmigan. In addition to eliminating these acres from the proposal, this alternative further reduces helicopter traffic near Moose Pass by eliminating the staging area at the Mile 33.2 Gravel Pit, near Moose Pass.

Alternative Description. This alternative would implement the same user days within the core use units—1800 client days, but a reduction from 600 to 400 within the exploratory units. This alternative eliminates helicopter use in the West Seattle Creek, West Moose Creek and West Ptarmigan units and implements timing restrictions in East Seattle Creek, West Bench Peak and North Bench Peak areas. Other elements, including the season of use and design and mitigation measures are the same as the proposed action.

This alternative would authorize CPG use of the units described below (see Map 2-2).

Core Unit (1,800 client days)

- Glacier-Winner
- West Twentymile
- North Twentymile
- East Twentymile
- Placer-Skookum
- Grandview
- West Bench Peak (Monday-Thursday)
- North Bench Peak (Monday-Thursday)
- East Bench Peak

Exploratory Unit (400 client days)

- Mid Seattle Creek
- East Seattle Creek (Monday-Thursday)
- East Moose Creek
- East Ptarmigan
- Snow River
- Mount Ascension

Staging Areas

- Girdwood Airstrip
- Kern Creek (avalanche gun mount site)
- Ingram Creek
- Big Game Alaska
- Mile 62 Gravel Pit (National Forest site)
- Mile 12.4

* **Core Restricted Units** no use on Fridays, Saturdays and Sundays.

** **Exploratory Restricted Units** no use on Fridays, Saturdays and Sundays.

*****Net Acres Available (after mitigation)** No-Fly Zones (see Chap. 2, Mitigation Measures, Wildlife Impact Issues, #3.)

Map 2-3

Back of map 2-3

Alternative 4 – Permitted Use-2003 (159,100)

Core Units — 141,000 acres

Core Restricted Units*— 18,100 acres

Net Acres Available (after mitigation)*** – 131,247

Client Days – 1,200

Alternative Design. This alternative responds to comments expressed during public scoping that did not desire an *expansion* of the existing helicopter-skiing activity. Therefore this alternative maintains the 2003 permitted helicopter skiing use level and geographic area. This alternative analyzes 1,200 user days as compared to 2,400 in the proposed action.

This alternative would not expand helicopter operations adjacent to the communities of Moose Pass, Seward, Sunrise or Hope. Therefore, no specific design features are included in this alternative to address impacts to these communities.

In addition, this alternative would not expand helicopter operations into areas with potential user conflict, such as Seattle Creek. However, this alternative does include helicopter skiing in the Bench Peak Area. Therefore user conflicts are addressed in this alternative by timing features in the West Bench Peak area, similar to Alternative 3.

Alternative Description. There would be no use in West Seattle Creek, Mid Seattle Creek, East Seattle Creek, West Moose Creek, East Moose Creek, West Ptarmigan, East Ptarmigan, Snow River, and Mount Ascension (all exploratory units). There would be no use on Friday, Saturdays, and Sundays in the West Bench Peak unit. There would be no staging areas at Kern Creek, Ingram Creek, Mile 33.2 (near Moose Pass) or Mile 12.4. Other elements of this alternative, including the season of use and design and mitigation measures are the same as the proposed action. This alternative would authorize CPG use of the following units (see Map 2-4):

Core Unit (1,200 client days)

- Glacier-Winner
- West Twentymile
- North Twentymile
- East Twentymile
- Placer-Skookum
- Grandview
- West Bench Peak (Monday-Thursday)
- North Bench Peak
- East Bench Peak

Staging Areas

- Girdwood Airstrip
- Big Game Alaska
- Mile 62 Creek Gravel Pit (National Forest site)

* **Core Restricted Units** no use on Fridays, Saturdays and Sundays.

*****Net Acres Available (after mitigation)** No-Fly Zones (see Chap. 2, Mitigation Measures, Wildlife Impact Issues, #3.)

front of map 2-3

Back of map 2-4

Alternative 5 - Minimize User Conflicts (231,400 acres)

Core Units —135,400 acres

Exploratory Units —96,000 acres

Net Acres Available (after mitigation)*** - 179,588 (114,401 Core & 65,187 Exp.)

Client Days – 1,800 (1,500 Core and 300 Exploratory)

Alternative Design: This alternative is designed to minimize user conflicts. Alternative 5 differs from alternative 3 by *minimizing* user conflict. For example, instead of utilizing timing features, this alternative eliminates helicopter skiing in areas with user conflicts. This alternative also eliminates the exploratory unit, Mt. Ascension, and further reduces client days within the exploratory unit to 300.

User conflicts are addressed in this alternative by eliminating use areas and reducing use levels, as compared to the timing features utilized in Alternative 3. Specifically, no helicopter use would be authorized in the East Seattle Creek, West Bench Peak and North Bench Peak. As described above, non-motorized users specifically identified these areas as popular and accessible areas.

This alternative reduces user days and eliminates the Mt. Ascension area in the exploratory unit. This reduction, in both numbers and geographic area, was designed to reduce the chance of motorized/non-motorized interaction within the exploratory unit.

This alternative addresses community impacts similar to the features and design of Alternative 3. It eliminates a staging area adjacent to Moose pass and reduces the amount of skiing area within an audible and visual zone adjacent to the communities of Hope, Sunrise and Moose Pass.

Alternative Description: There would be no use in the West Bench Peak, West Seattle Creek, East Seattle Creek, West Moose Creek, West Ptarmigan and Mt. Ascension units. Other elements of this alternative, including the season of use and design and mitigation measures are the same as the proposed action. This alternative authorizes CPG use of the following units (see Map 2- 5):

Core Unit (1,500 client days)

- Glacier-Winner
- West Twentymile
- North Twentymile
- East Twentymile
- Placer-Skookum
- Grandview
- East Bench Peak

Exploratory Unit (300 client days)

- Mid Seattle Creek
- East Moose Creek
- East Ptarmigan
- Snow River

Staging Areas

- Girdwood Airstrip
- Kern Creek (avalanche gun mount site)

- Big Game Alaska
- Ingram Creek
- Mile 62 Gravel Pit (National Forest site)
- Mile 12.4

***Net Acres Available (after mitigation) No-Fly Zones (see Chap. 2, Mitigation Measures, Wildlife Impact Issues, #3.)

Map 2-5

Back of Map 2-5

Alternative 9 – Reflects 2000-2002 Level of Use (104,700 acres)

Core Units —104,700 acres

Net Acres Available (after mitigation) *** – 92,623

Client Days - 800

Alternative Design. This alternative analyzes a reduction in client days from existing levels in the proposed action. This alternative analyzes 800 user days as compared to 2400 in the proposed action. This alternative reflects use levels during the period 2000-2002, but would authorize a five-year permit. This alternative responds to comments received during public scoping which desired a *reduction* of the existing (2003) helicopter-skiing activity.

Alternative Description. Under this alternative, the number of client days reflects 2000-2002 use, but total acres and ski units are adjusted to account for a closure to motorized use of a portion of the Glacier-Winner Creek unit per the Revised Forest Plan. There would be no use in East Twentymile, West Seattle Creek, Mid Seattle Creek, East Seattle Creek, West Bench Peak, West Moose Creek, East Moose Creek, East Ptarmigan, West Ptarmigan, Snow River, and Mount Ascension. There would be no staging areas at Kern Creek, Ingram Creek, Mile 33.2 (near Moose Pass) or Mile 12.4. Other elements of this alternative, including the season of use and design and mitigation measures are the same as the proposed action. This alternative would authorize CPG use of the following units (see Map 2-6):

Core Units (800 client days)

- Glacier-Winner
- West Twentymile
- North Twentymile
- Placer-Skookum
- Grandview
- East Bench Peak
- North Bench Peak

Staging Areas

- Girdwood Airstrip
- Big Game Alaska
- Mile 62 Creek Gravel Pit (National Forest site)

***Net Acres Available (after mitigation) No-Fly Zones (see Chap. 2, Mitigation Measures, Wildlife Impact Issues, #3.)

Map 2-6

back of map 2-6

Table 2-1 Summary of Alternatives

End Notes for Table 2-1

Mitigation Measures

In addition to the specific restrictions to CPG's operation included under each alternative, the following mitigation measures apply to each action alternative. Wildlife mitigation measures have been coordinated with the Alaska Department of Fish and Game (ADFG). All mitigation measures are assumed to be in place in the "Effect of Alternatives" section in Chapter 3.

General Operating Issues

1. CPG will submit a Safety and Operating Plan for Glacier and Seward Ranger District approval that, at a minimum, will include (1) avalanche safety (addressing client safety, as well as safety of other backcountry users in the area); (2) helicopter safety; (3) emergency rescue procedures; (4) guide requirements; and (5) a system for resolving complaints from the public.
2. CPG will follow an established set of flight routes to and from heli-skiing units that avoid low-level (less than 1,500 feet above ground level [AGL]), overflights of no-fly zones, backcountry ski areas closed to heli-skiing, and residences, as weather allows. *
3. Glacier and Seward Ranger District personnel will monitor all aspects of the CPG operation on NFS lands to assure permit compliance. CPG will provide, on a need only basis, an approved (Office of Air Services carded) pilot and helicopter and follow Forest Service air safety procedures for permit administration.
4. CPG will provide the Glacier Ranger District a copy of their run log every two weeks.
5. CPG will use a GPS data logger to track their flights, and provide data to the Glacier Ranger District once every two weeks.
6. CPG will ensure that all litter is removed from the permit areas. In addition, at the end of the season, CPG shall ensure that all helicopter landing area improvements are removed. This may require a flight during the summer months after the snow has melted.

Wildlife Impact Issues

1. Helicopters will maintain a 1/2-mile horizontal or 1,500 feet AGL from all observed wildlife. *
2. Helicopters will not hover, circle, or harass any species of wildlife in any way.
3. CPG will adhere to the No-Fly Zones, which identify mountain goat and Dall's sheep concentration areas (See No-Fly Zone Maps, Appendix B). No-Fly Zones are based on a separation distance of 1,500 feet from important habitat. The ADFG will be consulted before any alteration of zone boundaries to less than 1,500 feet.
4. CPG will provide mountain goat, Dall's sheep, and other wildlife sightings to the Glacier Ranger District. The District will provide CPG with incidental wildlife observation forms to be filled out daily. These forms are to be submitted annually upon completion of the permit season. Unique wildlife sightings, such as wolves, wolverines, or brown

bears, will be reported during the next business day.

5. If a brown bear or wolverine den is located (either by CPG or during wildlife observation flights), CPG will maintain a 1/2 mile horizontal or 1,500 AGL separation during their operations. *

6. CPG will not ski or conduct any activity within 330 feet of known bald eagle nests.

7. Helicopter flights will not fly within 1/4-mile horizontal distance or 1,500 AGL of any active bald eagle or goshawk nest. When it is not known whether the nest is active, helicopter flights will avoid the nest. The Glacier Ranger District will provide CPG an updated bald eagle and goshawk nest map prior to each season. *

Recreation Conflicts and Community Impacts Issues

1. CPG will provide a public “heli-skiing hot line” stating their planned runs for the day.

2. CPG will not fly over the east side of Turagain Pass (non-motorized recreation area).

3. All heli-skiing will take place between 8:30 a.m. and 7:00 p.m.

4. All helicopters will maintain a distance of 1/2 mile above the valley floors.**

5. All helicopters will maintain a distance of 1/2-mile horizontal distance or 1,500 feet AGL above observed users. *

6. Helicopters exiting from the Girdwood Airstrip will stay at very low levels either in Glacier Creek Gorge or just west of the creek until near the Four Corners area. Flights toward Turnagain Arm and the southern units will follow the western fringe of the Girdwood Valley until over the Seward Highway, then will follow the highway or cross Turnagain Arm. Flight departures from the Girdwood Airstrip to the south over residential areas will only be used as absolutely needed due to wind direction or other safety factors.

7. Helicopters exiting from the Mile 33.2 gravel pit staging area and traveling toward Upper Trail Lake will travel in a manner as to minimize noise impacts to people living with the Wilderness Park and Toklat Estates subdivisions at mile 34 of the Seward Highway, Trail Lake Hatchery and associated homes, and people’s homes along the highway on the north side of Moose Pass community at mile 30 of the Seward Highway.

8. CPG will not fly within five miles of the South Fork of Snow River, the area closest to the highway, to reduce potential conflicts with non-motorized users.

9. Helicopters exiting/entering from the Seward Airport or Mile 12.4 staging area will not fly in the Resurrection River Valley corridor. There will be no flightseeing over Exit Glacier or Harding Ice Fields to preserve the natural quite of the Exit Glacier area.

10. Helicopter skiing will not be permitted after March 31 in the Placer-Skookum unit in the area that is closed to all motorized use by the Revised Forest Plan.

Safety Issues

1. All FAA safety requirements will be followed.
2. Helicopters will not land above, nor will CPG ski onto an avalanche path above any observed backcountry user.
3. Explosives will not be used for avalanche control.
4. CPG will have standard fuel spill prevention, containment, and cleanup materials on hand at any fueling site and will maintain and follow a spill plan that includes spill prevention, containment, cleanup, and notification procedures. If fueling takes place within 50 feet of a wetland or water body, the fuel tank will be located within an impermeable containment basin.

**Helicopters may fly less than the minimum required distance when flight safety may be compromised.*

***Helicopters may fly less than the minimum required distance when (1) shuttling passengers from the bottom to the top of a run, (2) during landing and takeoffs, (3) flying over major highway corridors, and (4) when safety may be compromised.*

Monitoring

The National Forest Management Act requires a national forest to monitor and evaluate their forest plan (36 CFR 219.11). Chapter 5 of the CNF Revised Forest Plan includes the monitoring and evaluation activities to be conducted as a part of Forest Plan implementation. The categories of monitoring include:

- **Implementation Monitoring:** Used to determine if the goals, objectives, standards and guidelines, and practices of the Revised Forest Plan are implemented in accordance with the Revised Forest Plan.
- **Effectiveness Monitoring:** Used to determine if the Revised Forest Plan is achieving its objectives and whether the objectives are achieving goals.
- **Validation Monitoring:** Used to determine whether the data, assumptions, and estimated effects used in developing the Revised Forest Plan are correct.
- **Baseline Questions:** Used to examine whether the assumptions and predicted effects used to formulate the Revised Forest Plan are correct.

Routine implementation monitoring is part of the administration of a special-use permit. Routine implementation monitoring assesses whether the project was implemented as designed. The Forest Service monitors the operator's performance relative to special-use requirements. If an operator is deficient in any areas of their Operation and Safety Plan or permit requirements, they are given an opportunity to correct them. If the operator is not successful in correcting the deficiencies, action is taken to revoke the permit.

The Forest Service will continue to gather information on wildlife and recreation use as described in Chapter 3.

Summary of Impacts

Wildlife Impacts (Issue 1)

General Wildlife

Under Alternative 1, No Action, CPG's permit would not be issued and no commercially guided helicopter skiing would occur on NFS lands on the Kenai Peninsula unless another permit was applied for and granted. As a consequence, there would be no impacts to wildlife from commercial helicopter skiing activities.

One may make the assumption that the action alternative that impacts the least number of acres would impact the least number of individual wildlife, and the alternative that provides for the least number of client days would have a lessening degree of the overall effect on wildlife. If this was true, then the alternatives would range from least impacting to potentially more impacting in the following order: Alternatives 9, 4, 5, 3, and 2. However, the distribution of individuals in the population is not equal across the project area. Therefore, this assumption may not be correct. Furthermore, the specific locations of wide ranging species such as wolverine and grizzly bear are difficult to pinpoint.

In order to address the uncertainty related to population distribution over the large geographic area analyzed, the project has applied similar mitigation to all action alternatives. Furthermore, the mitigation and design features applied to the project are designed to have minimal impacts on wildlife populations, regardless of whether or not a specific population was present in a certain ski area. By implementing this conservative approach, none of the proposed heli-skiing activities should impact any wildlife population, although minor effects to individual animals may occur.

Brown Bears

Brown bears are normally not active during the heli-skiing season but winter in dens through mid-April. Brown bears may be susceptible to disturbance while in their dens or at the time of emergence. The proposed mitigation measure would reduce the potential for direct disturbance, but would not eliminate it, as brown bears den in different locations each year. Identifying emerging brown bears would reduce further disturbance by avoiding the area.

Under Alternative 1, No Action, CPG's permit would not be issued and no helicopter skiing would occur on the Kenai Peninsula geographic area unless another permit were applied for and granted. As a consequence, there would be no impacts to brown bears. Under all action alternatives, heli-skiing operation may affect individual brown bears. However, helicopters must maintain a 1,500 feet AGL at all times except shuttling passengers from the bottom to the top of a run, during landing and takeoffs, and unless safety would be compromised. If a brown bear den is located (either by CPG or during wildlife observation flights), then CPG would maintain a ½ mile horizontal or 1,500 AGL separation during their operations. Helicopters may not hover, circle, or harass brown bears in any way. Therefore, it is unlikely that any action alternative would have a substantial effect on brown bears or impact brown bear populations or viability.

Mountain Goats

Heli-skiing has the potential to disturb mountain goats. Physiological responses are unknown, but measures of overt behavior indicate short-term disturbance and no significant alteration of maintenance behavior. If helicopters consistently use similar flight paths, mountain goats may become habituated, reducing the effect of the disturbance.

Under Alternative 1, No Action, CPG's permit would not be issued and no helicopter skiing would occur on the Kenai Peninsula geographic area unless another permit were applied for and granted. As a consequence, there would be no impact from this activity to mountain goats. All action alternatives may affect individual mountain goats, but it is unlikely that any alternative would have a substantial effect on mountain goat populations or viability. Helicopters are not allowed to access the no fly zones unless they maintain a 1,500 feet AGL at all times and they must maintain a 1,500 feet separation level from all observed goats. Helicopters may not hover, circle, or harass mountain goats in any way.

Wolverine

Denning females could be displaced by helicopter skiing activities occurring in denning areas and could abandon their den sites. Heli-skiing in remote areas has the potential to displace wolverines, or disrupt foraging or travel patterns.

Under Alternative 1, No Action, CPG's permit would not be issued and no helicopter skiing would occur on the Kenai Peninsula geographic area, unless another permit were applied for and granted. As a consequence, there would be no impacts to wolverine. Under all action alternatives, heli-skiing operation may affect individual wolverine. However, helicopters must maintain a 1,500 feet AGL at all times except shuttling passengers from the bottom to the top of a run, during landing and takeoffs, and if safety would be compromised. If a wolverine den is located (either by CPG or during wildlife observation flights), then CPG would maintain a 1/2 mile horizontal or 1,500 AGL separation during their operations. Helicopters may not hover, circle, or harass wolverine in any way. Therefore, it is unlikely that any action alternative would have a substantial effect on wolverine or impact wolverine populations or viability.

Dall's Sheep

Heli-skiing has the potential to disturb Dall's sheep. Behavior responses are similar to those observed in mountain goats.

Under Alternative 1, No Action, CPG's permit would not be issued and there would be no impacts to the Dall's sheep. No-fly zones created for mountain goats overlap with concentrations of Dall's sheep according to observations made by the ADFG (L. Nichols personal communication) and summer survey data (USDA-Forest Service, unpublished). Helicopters are not allowed to access the no fly zones unless they maintain a 1,500 feet AGL at all times and they must maintain a 1,500 feet separation level from all observed sheep. Helicopters may not hover, circle, or harass sheep in any way. Under all action alternatives, heli-skiing operation may affect individual sheep, but it is unlikely to have a substantial effect on their populations or viability.

Recreation Conflicts (Issue 2)

Alternative 1 - No Action

Heli-skiing opportunities

This alternative would eliminate any opportunities for heli-skiing opportunities on the Kenai Peninsula geographic portion of the Chugach National Forest (including the area around the community of Girdwood). These opportunities would still be available on other portions of the Chugach National Forest near Valdez.

User Conflicts

Denial of CPG's application would benefit backcountry skiers by eliminating the noise and other visual disturbances associated with helicopters as well as the competition for untracked snow associated with heli-skiers. These benefits would be most evident in areas used by both types of skiers, particularly in the Glacier- Winner Creek and Bench Peak areas and other accessible terrain on the Kenai Peninsula.

Alternative 2 - Proposed Action

Heli-skiing opportunities

A total of 2,400 client days would be permitted for heli-skiing with 1,800 client days for core units and 600 client days for exploratory units. The area that would be permitted totals 338,200 acres. There is a timing restriction, no use on Friday through Sunday, on one unit (18,100 acres). This alternative would make the maximum opportunities available to members of the public who wish to participate in heli-skiing activities. New areas would be available for those clients who are returning.

User Conflicts

This alternative would have the highest potential for user conflicts because of the total number of client days (2,400) that would be permitted, and it would be the largest area under permit (338,200 acres). This alternative would authorize use on 18 units, 9 core units and 9 exploratory units. As compared to 2003 in which 7 units were authorized for heli-skiing on a total of 159,100 acres.

Alternative 3

Heli-skiing opportunities

This alternative would have the same number of client days in core units available for heli-skiing in core units as Alternative 2, but less client days in exploratory units. Some units would be eliminated and there would be a timing restriction on some units. The area that would be permitted for heli-skiing totals 306,300 acres. A total of 35,600 acres would not be available Friday through Sunday. New areas would be available for those clients who are returning. A total of 2,200 client days would be permitted with 1,800 client days for core units and 400 client days for exploratory units.

User Conflicts

This alternative would have the second highest potential for user conflicts because of the total number of client days that would be permitted and it would be the second largest area under permit.

Alternative 4

Heli-skiing opportunities

This alternative would make available the same opportunities for heli-skiing than what has been permitted in the past two years (159,100 acres). Several of the units

requested by CPG would not be permitted in this alternative (see Map 2-4). There is a timing restriction on one unit (18,100 acres). Heli-skiing activities in this unit would be permitted on Monday through Thursday. There would be no new areas available for those clients who are returning but they may be able to ski different terrain in the same units pending weather and snow conditions. A total of 1,200 client days would be permitted.

User Conflicts

This alternative would have a low potential for user conflicts because of the total number of client days that would be permitted and the reduced area under permit.

Alternative 5

Heli-skiing opportunities

This alternative would have less client days available for heli-skiing than Alternative 2 and some areas would be eliminated. The units that would be permitted cover 231,400 acres of National Forest. New areas would be available for those clients who are returning. A total of 1,800 client days would be permitted with 1,500 client days for core units and 300 client days for exploratory units.

User Conflicts

This alternative would have a moderate potential for user conflicts because of the total number of client days that would be permitted and the area under permit.

Alternative 9

Heli-skiing opportunities

This alternative would have less client days available for heli-skiing than in Alternative 2 and several areas are omitted. The units that would be permitted cover 104,700 acres of National Forest. No new areas would be available for those clients who are returning. A total of 800 client days would be permitted. This alternative is similar to CPG's permitted use prior to 2003.

User Conflicts

This alternative would have the least potential for user conflicts because it has the least number of client days that would be permitted and smallest area under permit.

Impacts on Communities (Issue 3)

When viewed in terms of the weighed populations percentage (see Chapter 4, Issue 3), residents of Girdwood would be the most affected by helicopter noise and helicopter sightings. Helicopters using the Girdwood Airstrip as a staging area and the North Twentymile Complex travel corridor through Glacier/Winner Creek unit would be readily heard and seen. In the Moose Pass area, helicopters would be readily heard and seen when using the Moose Creek travel corridor and the Mile 33.2 Gravel Pit staging area. People living near the staging area would be affected the most. As Mile 33.2 staging area is not analyzed in the other alternatives, this is relevant only to Alternative 2. Helicopters would also be heard and seen in Sunrise during helicopter activity in the West Seattle unit.